DRAFT Comments of the Economic and Technology Advancement and Advisory Committee (ETAAC) on the Draft Scoping Plan
September 4, 2008

To: Chairperson Mary Nichols and members of the California Air Resources Board
From: Members of the ETAAC Committee

Thank you for the opportunity to provide ETAAC feedback on CARB's Climate Change Draft Scoping Plan (Draft Plan). Our feedback is provided in this document in three sections: (1) general feedback, (2) detailed feedback on selected areas, and (3) an attachment with comments specific to the recommendations contained in the ETAAC report to CARB dated February 2008.

General Feedback on the Draft Scoping Plan

ETAAC believes the Draft Plan represents a good starting point for a comprehensive climate action plan for California. ETAAC commends CARB for producing an excellent document and we are pleased that several of our recommendations were included.

Regulations and Market Mechanisms

We applaud the inclusion of both regulatory and market mechanisms. Properly structured market mechanisms can reduce the costs associated with emissions reductions and climate change mitigation while reducing emissions beyond what traditional regulation can do alone. Among the market mechanisms, ETAAC supports a well-designed cap and trade market coupled with complementary policies to spur innovation, overcome traditional market barriers and address distributional impacts from possible higher prices for goods and services in a carbon-constrained world. We concur with CARB that a carbon fee should also be considered.

We believe it is imperative that CARB support the mix of direct measures and market mechanisms through an economic analysis that includes cost effectiveness, technological feasibility, ease of implementation, and other values of the different measures and demonstrates that the mix that CARB recommends best achieves the objectives outlined in AB 32. Some ETAAC members are concerned about what appears to be a heavy reliance on direct measures.

Scope

ETAAC noted in Chapter 9 of its report that, from the standpoint of encouraging early action, innovation, and clear price signals, "the AB 32 carbon cap should include as many different sectors of the economy as is practical" (p. 9-2). If transportation fuels are not included at the outset at the outset of the cap and trade program, the timely implementation of complementary policies, such as the Low Carbon Fuels Standard, aggressive GHG standards for all highway vehicles, and VMT policies, takes on even greater importance.

While a properly structured carbon market can reduce emissions and costs, ETAAC notes that it alone is not enough to break down all the barriers to transforming California's energy market to a low-carbon future (p. 1-4). To that end, the Draft Plan outlines direct measures touching on most sectors of the economy, including important focus areas such as energy efficiency, sustainable forests, and water in addition to the more obvious and frequently mentioned electricity/natural

gas, transportation, and industrial sectors. However, CARB has not proposed to include any measures in the plan to increase recycling or composting, noting that they are discussing these ideas with the California Integrated Waste Management Board (CIWMB). We strongly encourage CARB to reexamine our recommendations regarding waste reduction, recycling, and resource management (see ETAAC Chapter 4.IV).

Climate Mitigation and the Economy

The State's emissions reduction targets under AB 32 provide both challenges and opportunities for California's economy, and the regulations and other measures must be designed with the health of the State's economy in mind. ETAAC made many recommendations related to the economics of climate change mitigation, including revenue recycling, focus on efficiency, cleantech jobs and manufacturing.

Economic Assumptions and Level of Detail

ETAAC notes that any policy decisions must be informed and supported by robust economic modeling and analyses. ETAAC recommends that this economic analysis be made as transparent as possible to allow informed discussion by all stakeholders. CARB should ensure accurate cost and quantity inputs in a sector by sector analysis, and provide near term and long term employment and economic impacts for each sector. CARB should also perform a sensitivity analysis to determine if particular measures are driving the analysis and masking the impact of other measures, as well as a cost effectiveness analysis comparing across all measures including offsets and the cap and trade system. Finally, CARB should ensure that an ongoing and transparent process exists through the regulatory process and the implementation phase for evaluating and re-evaluating cost-effectiveness, and for considering new measures and discontinuing existing measures as new technologies, policies and cost effectiveness information surface. We look forward to seeing this economic analysis as soon as possible. Once the modeling has been completed, ETAAC recommends that CARB (1) revisit the Draft Plan to review the proposed measures for cost-effectiveness, (2) use the analysis to take into account costs and capital constraints when creating an implementation schedule for the recommended measures, and (3) provide opportunities for feedback on the analysis prior to initiating regulations.

Additionally, ETAAC members believe it is important to note that there is some uncertainty about the ability to achieve all the expected emission reductions listed in the Draft Scoping Plan and that the actual reductions achieved may potentially be less than projected reductions. For example, the Draft Scoping Plan assumes that the 33% RPS will result in 21.2 MMT of emission reductions by 2020. As the ETAAC Report states, a number of barriers must be addressed before greater renewable penetration can be achieved, including the lack of transmission infrastructure, energy storage technology, integration policy and coordinated policy direction. California's LSE's are aggressively procuring renewable energy to meet their 20% RPS goals for 2010 but the barriers cited above are posing challenges in meeting this goal. CARB should identify and address these barriers in the final Scoping Plan. Also, the Draft Plan appears to be basing the energy efficiency goals on the high end being considered by the CPUC, without accounting for the uncertainty surrounding achieving these reductions among individual utilities in the entire electric sector. Similarly, uncertainties exist for Combined Heat and Power (CHP) and the accompanying greenhouse gas reductions. The risk of any measure falling short of the

anticipated reduction is real, and CARB should provide a plan for meeting that contingency at the earliest possible opportunity. It may be useful to provide both high and low estimated reductions for measures, along with an explanation of the assumptions under each scenario. The estimated costs to satisfy the shortfall should be included in the economic analysis for the low scenarios.

Furthermore, the specific reduction targets in the Draft Plan are given as simple endpoints in 2020, without any explanation of the expected path of reductions over time. It would be helpful if CARB could provide additional information about the timing and phasing-in of reductions under each measure, again taking care to account for the likelihood of delays and setbacks along the way.

Need for Increased Coordination

ETAAC believes that the ambitious goals set out in the Draft Plan will require improved coordination among regulatory agencies (p. 1-7). There must be effective leadership across all State agencies to reduce GHG emissions from their own governmental operations and from the stakeholders they oversee and/or regulate. The Draft Plan should acknowledge the size of this challenge, and encourage timely coordination.

Detailed Feedback

ETAAC members identified three broad areas for more detailed feedback: (a) market mechanisms, (b) technology advancement and (c) land use issues. With the ETAAC report recommendations as a point of reference, ETAAC has provided comments on the Draft Scoping Plan's treatment of these three areas below. Note that additional comments concerning specific recommendations can be found in the appendix.

Market Mechanisms

As noted above, ETAAC supports the inclusion of the market mechanisms in the Draft Plan. However, three issues deserve further attention: (1) offsets and flexible compliance, (2) allowance allocation and use of possible revenues, and (3) pricing policies.

Offsets

In its report, the ETAAC noted that the development of an offsets market may be beneficial. Yet in order for this market to work properly, offsets must be real, additional, permanent, enforceable, predictable and transparent. (p.9-5) ETAAC recommends a standards-based approach informed by experiences with the CDM and CER processes rather than case-by-case review for this purpose (p. 9-5). The California Climate Action Registry (CCAR) has demonstrated that offset standards for the voluntary market can be developed that are credible, transparent, and effective. CARB can require the same rigor for offsets applied to a compliance market.

The Draft Scoping Plan appropriately recognizes the distinction between offsets for compliance and a voluntary offset market. Offsets for compliance for cap and trade can help reduce compliance costs by providing flexibility. A robust voluntary offset market can help the state capture additional cost-effective carbon reductions and related benefits.

Members of the ETAAC did not reach agreement on the issue of quantity and geographic limitations on offsets. Some members believe limits inherently involve tradeoffs between compliance costs and environmental and economic policy goals such as technological innovation and in-state co-benefits (p. 9-6). Members agree that these tradeoffs should be explicitly acknowledged and quantified should CARB choose to impose limits on the use of offsets. Geographic limits on offsets can help ensure that California is able to take advantage of the environmental and economic benefits of offset projects, but the restricted flexibility may likely increase costs. With regard to quantity limits, some members believe that quantity limits on offsets can encourage action and innovation in capped sectors. Others believe that incentivizing offsets will encourage innovation outside of capped sectors, while strong, long-term emission reduction targets provide sufficient incentive for innovation in capped sectors. Though some ETAAC members preferred limitations on offsets, the ETAAC Report noted that it is difficult to come up with a "scientific" number to justify a specific quantity limit (ETAAC Report 9-5, 9-6). Many members asked for data on the potential costs and benefits of quantitative and geographic limits on offsets.

The Draft Scoping Plan suggests a 10% individual entity limitation on the use of offsets for compliance. We would like further explanation of CARB's thinking regarding an offset limit of any amount, as well as further discussion as to why 10% is the appropriate limit and how this limit might change over time. We also recommend that CARB clarify whether the 10% limit on compliance offsets is based on a percentage of the reductions to be achieved by the cap and trade program or a percentage of total state reductions.

If there are limits on offsets for compliance, then it is important to make sure that the voluntary market captures all cost-effective emissions reductions so that the state can achieve AB 32 goals. The proposed California Carbon Trust (p. 2-4) would be one way to help develop, support, and encourage a robust voluntary offset market.

Allowance Allocation and Use of Possible Revenues

In Chapter 9 of its report, ETAAC examined allowance allocation methods with three specific policy goals in mind: encouraging early action, innovation, and clear price signals. The ETAAC report notes that free allocations based on historic output (grandfathering) is bad for all three criteria and that some level of auctioning would provide the strongest and clearest price signals for early action and innovation. The Draft Plan states that CARB intends to move quickly from a system where some permits are distributed freely to where most are auctioned. We think more details are required in the Scoping Plan about the timing and process for distributing allowances and the reasons underlying each decision. In its report, ETAAC recommended that any revenues from allowance auctions or carbon fees be used to further AB 32 goals (p. 1-12).

We would like to see this recommendation in the Draft Plan. ETAAC proposed the creation of an entity such as the California Carbon Trust to manage the use of auction revenues to encourage emissions reductions and related AB 32 policy objectives (p. 2-3). In particular, ETAAC recommends certain productive and appropriate uses of revenues (p. 9-4):

- Direct investment in and purchase of additional GHG emissions reductions to support the development and deployment of low-carbon technologies through an investment program.

- Allocate funds to California universities, colleges, research facilities for RD&D dedicated to technologies with potentially high GHG emission reduction value.
- Create financial vehicles and/or programs that address specific gaps, imperfections, or opportunities in the carbon market in order to serve as a catalyst for both private and public sector participation.
- Support Environmental Justice goals by investing in emission reduction projects with co-benefits in impacted communities. In order to achieve this goal, CARB should establish a process and a method for identifying the communities that are maximally impacted and for maximizing benefits for these communities.

If auction revenues exceed the level where they can be efficiently applied to abate carbon and other GHG emissions, ETAAC members suggested that they might be used to reduce distorting taxation or to provide payments to ratepayers.

The Draft Plan contains several possible uses of auction revenues, including and in addition to the uses listed above. ETAAC encourages CARB to collect comments on this issue and to view auction revenues as an important source of funding for achieving the ambitious goals set out by AB 32.

Pricing Policies

Existing incentives and labeling schemes are not doing enough to influence consumer behavior and purchasing decisions to move California toward a low carbon economy. Pricing policies can help steer consumers toward lower carbon products and lifestyle choices. ETAAC recommendations included fee and tax shifting, or feebates, as one way to achieve this goal (recommendations 2.III.E and 3.IV.G). Feebates are currently listed as "under consideration" for inclusion in the scoping plan, and ETAAC recommends that they be evaluated in the final draft because of their potential to provide cost-effective reductions in fuel consumption. ETAAC also recommended other pricing strategies to influence consumer decisions, including pay-as-you-drive insurance (3.III.B) and congestion pricing (3.III.C).

Technology Advancement

ETAAC notes that achieving the emissions reductions goals set out by AB 32 will require increased and accelerated deployment of new and existing technologies, and that the technologies required to support reductions beyond 2020 may need additional research and development. Technology advancement is therefore a very important issue for both near term and long term climate policy goals. ETAAC members believe that the Draft Plan's discussion of innovation and RD&D to support the 2020 and 2050 goals is lacking, and that there are certain high priority technology areas, such as enabling technologies, that require added attention.

General Innovation and RD&D

The Draft Plan acknowledges that technological advancement will be necessary to achieve the future greenhouse gas reductions required to reduce global warming. The need for funding of new technologies was also touched on in the discussion on use of auction proceeds. However, the Draft Plan contains little concrete discussion on what it takes to achieve the necessary technological advancement. The importance of new technologies and the challenges to developing and commercializing them is so significant that the topic deserves more discussion.

ETAAC believes that there are significant barriers to technology development and deployment that require attention. (see p. 1-5, recommendations 2.II.A, 2.II.B, 4.III.I). These barriers include market penetration, transition issues such as infrastructure development and permitting, and financial and technological roadblocks at certain key stages of technology development. The Draft Plan should include a section dedicated to overcoming the hurdles of developing and commercializing technological advancement in a manner that does not pick winners, as well as concrete recommendations on how to develop and support this innovation infrastructure. More information on the performance standards and incentives needed to stimulate innovation should be included.

ETAAC believes that increased coordination, innovative public financing, competitive renewable energy zones and other methods of transmission reform, and cleantech workforce training could all prove beneficial for increasing the development and deployment of low carbon technologies. California's state government can also play a role, in coordination with the federal government, in supporting RD&D, setting codes and standards in a manner that maximizes incentives for innovation, and by being an early adopter of low and zero emission vehicles.

Enabling Technologies
The ETAAC Report describes a number of enabling technologies, including energy storage, plug-in electric vehicles as storage devices and smart grid as enabling technology for renewables and clean vehicles (ETAAC Report, Chapter 5.IV). In particular, energy storage is needed to help integrate higher penetration of intermittent resources. As described in the ETAAC Report, large-scale successful storage technologies can help transform wind generation into a reliable resource for energy planning, enabling California to take full advantage of this renewable resource abundant throughout the West.

However, the Draft Plan makes no mention of the important role enabling technologies play in the State's zero and low carbon strategy. The Draft Plan should acknowledge the importance of enabling technologies and include strategies that would expressly support the development and implementation of enabling technologies as described in the ETAAC Report.

Carbon Capture and Sequestration (CCS)
The ETAAC Report identifies the demonstration of CCS in geologic formations as a key opportunity for California to benefit from national and international partnerships, as well as a potential opportunity for achieving long-term reductions in GHG emissions, especially on a national and global scale (ETAAC Report, page 5-21). The Draft Plan does not appear to consider CCS in its recommendations, other than to mention it as part of the "vision for the future" to achieve the 2050 goals (p. 73, C-58) and to briefly mention it as one way to potentially reduce emissions in the electricity and industrial sectors (p. C-79, C-105).

The Draft Plan should acknowledge the need for carbon capture and sequestration demonstrations and pilots, including biological processes, with appropriate standards for safety, coordination of sitting and permitting, and other considerations, so that the technology can be fully developed and commercialized for use in electricity generation, fuels production, and industrial processes. Taking these steps now would provide an incentive to separate CO_2 for

sequestration. WESTCARB, which is managed by the CEC, has conducted some groundbreaking work in this area, but more needs to be done, including funded commercial-scale projects.

Land Use and Smart Growth

The Draft Scoping Plan's target of 2 $MMTCO_2E$ for local government actions and regional targets (land use and smart growth) is low and underestimates the sector's potential contribution to the state's 2020 emissions limit. The 2 $MMTCO_2E$ target will not get the state on the path to reach its 2050 goals. CARB should put in place a target for land use that will send a strong message to local and regional governments that business-as-usual land use is not acceptable and that we must start designing communities that provide a balance of transportation options and reduce the need to drive. Transportation emissions are the largest source of California's emissions, and they present a large opportunity to achieve emissions reductions.

ETAAC also supports the proposal for land-use planning agencies to use the CEQA process to avoid or mitigate emissions resulting from forest conversion. This complements other recommended "smart growth" measures to concentrate development and reduce commute distances, and will simultaneously reduce expansion of the wildland-urban interface (WUI) thereby reducing wildfire suppression costs and ignition sources.

The legislature has been active this year in trying to work with stakeholders to find common ground and develop incentives that would encourage smart growth and help the state meet emissions reduction targets. (SB 375, Steinberg). Similar focus and leadership from CARB on he issue would be helpful.

Detailed Comments on ETAAC Recommendations Are Attached

We have attached appendix A, which contains a status update on the ETAAC recommendations from our February 2008 report to the CARB. We have provided our best understanding of the status of each recommendation, its relationship to the Draft Scoping Plan and where appropriate, specific additional comments relative to the Draft Scoping Plan.

Thank you for the opportunity to provide comments on the Draft Scoping Plan. We offer these comments in the spirit of assisting staff and leadership at CARB in your exceptional efforts to prepare a final Scoping Plan that offers a visionary roadmap to address climate change.

Respectfully submitted,

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